

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

APPELLANT:	Christian Schmid
SERIAL NO.:	10/696,344
FILING DATE:	10/29/2003
CONF. NO.:	8104
FOR:	INK COMPOSITIONS FOR USE IN HIGHLIGHTER MARKERS AND ASSOCIATED METHODS
ART UNIT:	2853
EXAMINER:	Manish S. Shah
DOCKET NO.:	200315617-1

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DATE OF DEPOSIT: December 9, 2008

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Sir:

Appellants submit this Reply Brief in response to the Examiner's Answer, mailed on October 28, 2008. The Examiner's Answer was submitted in connection with their Appeal Brief, filed on July 2, 2008, which was filed in response to the final rejection of the Patent Office, mailed March 24, 2008, in the above-identified application.

STATUS OF CLAIMS

Claims 1-32 remain pending and have been rejected. The claims on appeal in this application are claims 1-32.

GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL

The issues presented for review are:

- a. whether claims 1-2, 4-7, 9-12, and 27-28 are unpatentable under 35 U.S.C. § 103(a) as being obvious over Japanese Pat. No. 63-061065 (hereinafter "Pentel") in view of U.S. Pub. No. 2003/0226474 (hereinafter "Mammen");
- b. whether claims 3 and 8 are unpatentable under 35 U.S.C. § 103(a) as being obvious over Pentel in view of Mammen and further in view of U.S. Pat. No. 5,279,652 (hereinafter "Kaufmann");
- c. whether claims 13-18 and 29-30 are unpatentable under 35 U.S.C. § 103(a) as being obvious over Mammen in view of Pentel and Kaufmann; and
- d. whether claims 19-26 and 31-32 are unpatentable under 35 U.S.C. § 103(a) as being obvious over Mammen in view of Pentel and Kaufmann.

ARGUMENT

A. Examiner's Answer

The following numbered paragraphs summarize the Examiner's 103 rejections and the Examiner's response to the Appellants' arguments. The following sections (B and C) address those arguments that have been presented by the Examiner in response to the Appellants' previous arguments. The Appellants refer the Board of Appeals to the Appeal Brief for a more complete summary of Appellants' positions, as supplemented by the present Reply Brief.

1. In rejecting claims 1-2, 4-7, 9-12, and 27-28, the Examiner alleges that Pentel teaches a highlighter composition including a coloring material, an organic solvent, an acid compound having the present pKa, an acid buffer, and an acid buffer including a weak acid. However, the Examiner acknowledges that Pentel fails to teach an acid-functionalized pigment or fluorescent colorant, a vehicle of water or diethylene glycol, and a colorant of Acid Blue 9. To allegedly cure the deficiencies, the Examiner then cites Mammen as teaching a fluorescent colorant, a liquid vehicle of water diethylene glycol, propylene glycol, and a colorant of Acid Blue 9.

2. In rejecting claims 3 and 8, the Examiner alleges that Pentel in view of Mammen teaches all of the elements as outlined above, but acknowledges that the combination does not teach the use of succinic acid or an acid functionalized pigment. To cure the deficiencies, the Examiner cites to Kaufmann as allegedly teaching succinic acid and that the colorant is an acid functionalized pigment.

3. In rejecting claims 13-18 and 29-30, the Examiner alleges that Mammen discloses a method of reducing smear using the claimed composition, but acknowledges

that Mammen does not teach an acid buffer with a pKa from 2 to 6, an acid buffer having ascorbic acid, acetic acid, succinic acid, or where the acid buffer is configured to reduce mobility of colorants. To cure the deficiencies, the Examiner cites Pentel as allegedly teaching the above elements except for the succinic acid, for which the Examiner cites Kaufmann.

4. In rejecting claims 19-26 and 31-32, the Examiner provides the same combination as previously recited in the above paragraph; i.e., Mammen in view of Pentel in view of Kaufmann, repeating the exact arguments. The Applicant is not aware of any reason why the claims were split as the combination and arguments provided by the Examiner were the same.

5. In response to Appellants' argument that the combination of Pentel and Mammen does not teach an acid buffer, the Examiner responds that "as long as [the] reference has the same claimed chemical within the appellant's claimed range, then it has the same function and therefore solves the same purpose." Examiner's Answer, page 8-9. The Examiner further contends that "because Pentel is the primary reference, it doesn't require reasoning why ascorbic acid is used." Examiner's Answer, page 9.

6. In response to Appellants' argument that Mammen teaches away from the addition of acid, the Examiner alleges that Mammen does not disclose that the addition of acid is problematic and, "more importantly, the secondary Mammen reference is used to show [] the highlighter composition." See Examiner's answer, page 9.

7. In response to Appellants' argument that Pentel does not disclose an acid buffer or further including a weak base, the Examiner argues that Appellants' specification discloses that a weak acid can be the acid buffer, and as Pentel discloses a

weak acid, the claim element is satisfied. Further, the Examiner alleges that Pentel discloses an acid buffer further comprising a weak base.

8. In response to Appellants' argument that Kaufmann is an anti-blocking agent, the Examiner alleges that "the claimed 'acid buffer' is merely interpreted as any acid and the reasoning behind its use is considered irrelevant." Examiner's Answer, page 10.

9. In response to Appellants' argument that Mammen teaches away from using an acid-containing highlighter ink, the Examiner alleges that the pKa of the acid buffer of the ink is different than the pKa of the final ink. Specifically, the Examiner states, "[t]he claim only requires that the buffer have this range, not the final composition." Examiner's Answer, page 11. The Examiner also notes that Pentel teaches an ink having an acid buffer with a pKa from 4.2 to 11.

B. The Pentel/Mammen Combination

The present comments are directed towards all of the Examiner's responses to Appellants' arguments using Pentel in view of Mammen or Mammen in view of Pentel. The Examiner's comments directed at Kaufmann are addressed in subsection C of the present response.

The primary difference between the Appellants' position and the Examiner's position is whether Pentel needs to disclose only a chemical or compound in order to the meet the present claim element of an acid buffer or a chemical or compound that provides a specific functionality. In other words, does the Examiner need to show the functionality of the claim element. Appellants have consistently argued throughout prosecution that the Examiner must show the element of an acid buffer in terms of functionality rather than just a chemical component(s) that may act as a buffer.

Appellants submit that the claim element of "an acid buffer having a pKa from about 2 to about 6" cannot be solely satisfied by reciting any chemical or compound within the range but that such chemical or compound must function as an acid buffer. In other words, Appellants submit that the term "acid buffer" acts as a functional limitation on the claims. Further, Appellants submits that the MPEP allows for functional limitations. Specifically, 2173.05(g) Functional Limitations states:

A functional limitation is an attempt to define something by what it does, rather than by what it is (e.g., as evidenced by its specific structure or specific ingredients). There is nothing inherently wrong with defining some part of an invention in functional terms. Functional language does not, in and of itself, render a claim improper. *In re Swinehart*, 439 F.2d 210, 169 USPQ 226 (CCPA 1971).

A functional limitation must be evaluated and considered, just like any other limitation of the claim, for what it fairly conveys to a person of ordinary skill in the pertinent art in the context in which it is used. A functional limitation is often used in association with an element, ingredient, or step of a process to define a particular capability or purpose that is served by the recited element, ingredient or step.

As such, the Applicant submits that the present functional limitation of an acid buffer “must be evaluated and considered, just like any other limitation of the claim.” MPEP 2173.05(g).

Therefore, Appellants submit that, under the MPEP and cited case law, the present element of an acid buffer must be shown in order to establish each and every element of the present claims, which is required to establish a proper *prima facie* rejection under 103. However, Appellants maintain that the Examiner has failed to do so, as evidenced by the Examiner’s explicit statement that “it doesn’t require any reasoning why ascorbic acid is used.” Examiner’s Answer, page 9. Appellants further note that such a statement is contrary to the standards set forth in KSR, where the Supreme Court looked for “an apparent reason” to make a combination of references further stating “[t]o facilitate review, this analysis should be made explicit.” KSR Int’l Co. v. Teleflex Inc., 167 L. Ed. 2d 705, 712 (2006). Appellants submit that no analysis was made as the Examiner has alleged that no apparent reason is needed.

Additionally, as discussed in Appellants’ Appeal Brief, Pentel never mentions for what purpose the compound is used. There is absolutely no teaching for what purpose or for what function the ascorbic acid derivative is used. The only information provided is that the purpose of the invention is to keep the pen point slightly drying. As such, Pentel does not disclose or teach the element of a compound that is formulated with a

composition as a whole which acts as an acid buffer. The fact that ascorbic acid may be used as an acid buffer does not provide *prima facie* evidence that the ascorbic acid is in fact an acid buffer. In fact, since Pentel discloses an equivalent compound, magnesium salt of ascorbic acid, as an appropriate ascorbic acid derivative, which could not be used as an acid buffer, the disclosed list indicates that the ascorbic acid derivative is not being used as an acid buffer. In other words, Appellants submit that since Pentel lists specific ascorbic acid derivatives that do not have the recited pKa from about 2 to about 6 or that could be used as an acid buffer within the definition set forth in the present specification, which is further discussed in Appellants' Appeal Brief, Pentel does not teach the element of an acid buffer.

The Examiner has also alleged that Appellants' teaching arguments have no merit since Mammen does not explicitly disclose that the addition of acid is problematic and since Appellants' "claim only requires that the buffer have this range, not the final composition." Examiner's Answer, page 11. The Examiner also notes that Pentel teaches an ink having an acid buffer with a pKa from 4.2 to 11.

First, Appellants submit that the Examiner appears to have confused pKa with pH. Specifically, Pentel's disclosure regarding pKa from 4.2 to 11 does not teach the use of a basic composition (as needed to properly combine with Mammen) since such pKa values are still acidic. As such, Appellants maintain their position.

Second, Appellants submit that the Examiner's reliance on the claim construction that the acid buffer has the claimed pKa range and not the final ink is wholly without merit. Specifically, Appellants have absolutely no idea how an acid buffer can provide an acidic pKa range to a solution but also be basic. Such a construction defies

the laws of known chemistry. To be clear, Appellants submit that an ink having an acid buffer could not be basic without destroying the buffer. As the present claims clearly recite that the acid buffer is in the ink, Appellants submit that the Examiner's claim construction is without merit.

Finally, Appellants submit that the Examiner has misunderstood the requirements in establishing teaching away. Specifically, Appellants submit that Mammen need not explicitly state that acids are problematic; rather, Appellants submit a person of ordinary skill in the art would be discouraged from adding a composition that contains acid, such as that described in Pentel, to Mammen's composition since Mammen specifically states that the pH range is adjusted in the alkaline range. Further, Appellants submit that Mammen would discourage a person of ordinary skill in the art to combine acid to a highlighter composition, since Mammen recites that the pH range of the highlighter composition should be basic. Appellants note that the case law for these standards is set forth in Appellants' Appeal Brief, page 17.

Regarding the Examiner's discussion that Pentel discloses a weak acid and weak base, Appellants renew the previous arguments with respect to acid buffer. Additionally, Appellants submit that the Examiner has misunderstood Appellants' arguments regarding the addition of a weak base.

Specifically, Appellants contend that Pentel does not disclose an acid buffer further containing a weak acid or weak base. Pentel clearly identifies individual compounds and provides absolutely no disclosure of an acid buffer that further includes a weak acid or weak base. Notably, Appellants requested that the Examiner provide the exact language of the alleged buffer system including the weak acid or weak base, so the

present issue can be clearly presented on appeal. However, the Examiner provided no such information in the Advisory Action, dated June 5, 2008, but merely referred to Appellants specification that the acid buffer can be a weak acid. Even though one embodiment of the present invention incorporates an acid buffer using a weak acid, Appellants submit that such an embodiment is immaterial to the embodiment describing the acid buffer as a weak acid further including a weak base.

Regarding the addition of a weak base, Appellants submit that even if the Examiner reads Pentel as disclosing an acid buffer, the listing of derivatives in the Pentel abstract indicates the compounds to be equivalent and singular. Therefore, the limited teachings of Pentel do not teach an acid buffer further including a weak base.

In light of the above, Appellants submit that the present combination of Pentel with Mammen or Mammen with Pentel does not teach each and every element of the pending claims and respectfully requests that the Board overturn the present rejections.

C. The Pentel/Mammen/Kaufmann Combination

Appellants renew the arguments with respect to the combination of Pentel and Mammen as discussed in the preceding section. In short, the Examiner has failed to provide each and every element of the present claim set.

Appellants renew the above arguments with respect to the Examiner's assertions regarding the use of the succinic acid in Kaufmann. Specifically, the Examiner has argued that Appellants' acid buffer is interpreted as any acid and the reasoning behind the use is irrelevant. Therefore, the Examiner attempts to substitute the ascorbic acid derivative of Pentel with the succinic acid of Kaufmann.

However, a close inspection of the present references reveals that the use of an acid buffer is not present in either Pentel or Kaufmann. Specifically, previously discussed, Pentel does not disclose an acid buffer but rather “a specific ascorbic acid derivative” in a range from 0.5 wt% to 3 wt%. Regardless of Pentel’s lack of teaching, the combination of Pentel and Kaufmann is clearly improper since Pentel requires the use of “a specific ascorbic acid derivative.” The Examiner is attempting to improperly substitute a specific ascorbic acid derivative with succinic acid. The succinic acid of Kaufmann is not a specific ascorbic acid derivative, and as such, the substitution is improper.

Even though the Examiner has assumed that such a substitution would be allowable, there is simply no disclosure that would justify such a position. In fact, , Pentel explicitly recites “a specific ascorbic acid derivative,” and therefore, Appellants submit that without further disclosure from Pentel such a substitution is improper. Appellants note that the failure of the Examiner to provide an English translation of Pentel limits such a broad, and seemingly contradictory, interpretation.

Furthermore, Kaufmann does not use succinic acid as an acid buffer. Even though the Examiner is attempting to use succinic acid to fulfill the acid buffer element, Kaufmann specifically states that succinic acid is an anti-blocking agent. In other words, Kaufmann describes an “antiblocking additive or solid” having an “ability to form crystals during the crystallisation [sic] process at or in, respectively, the capillary outlet opening in the solvent or solvent mixture employed” forming a “liquid crystalline to solid crystalline boundary hinder[ing] the evaporation of the solvent of the marking fluid.” See col. 3, lines 3-14; col. 4, line 43. Kaufmann further states that the anti-

blocking agent or solid can be "an inorganic salt, an organic acid or a derivative thereof, an amino acid or a derivative thereof, an isocyclic, polycyclic or heterocyclic compound or a derivative thereof, a sugar or a sugar alcohol or a derivative thereof, urea or a derivative thereof or a sulfur compound." See col. 4, lines 44-50. Clearly, anti-blocking agents are not interchangeable with acid buffers since sugar alcohols, urea, cyclic compounds, inorganic salts, and amino acids cannot be used as acid buffers. The Examiner is attempting to use an anti-blocking agent as an acid buffer; however, such a use is improper as these uses are not equivalent. The mere disclosure of a compound does not establish a *prima facie* case of obviousness. The Examiner must first show that an acid buffer is present in a reference and then must show that the acid buffer can be properly combined with an additional reference. The Examiner has not shown the existence of an acid buffer in Pentel or Kaufmann. Additionally, the Examiner has not shown that Kaufmann and Pentel can be properly combined.

In light of the above, Appellants submit that the present combination does not teach each and every element of the pending claims and respectfully requests that the Board overturn the present rejections.

CONCLUSION

Appellants respectfully submit that the claims on appeal set forth in the Appendix of Appellants' Appeal Brief are patentably distinct from the asserted prior art references. Particularly, none of the asserted combinations of references teach each and every element of the claimed invention.

For these reasons, Appellants respectfully request that the Board of Appeals reverse the rejections and remand the case to the Examiner for allowance.

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Dated this 9<sup>th</sup> day of December, 2008.



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